



Wage Formation in Sweden
2017

A summary of
Lönebildningsrapporten 2017

The National Institute of Economic Research (NIER) is a Swedish government agency accountable to the Ministry of Finance. We produce forecasts to support decisions on economic policy in Sweden, analyse economic developments and conduct economic research.

Published four times a year, our report *Konjunkturläget* contains a forecast for the Swedish and global economies as well as more in-depth special analyses of relevant economic topics. *The Swedish Economy* is an English translation of the summary and selected special analyses from *Konjunkturläget*.

Wage Formation in Sweden is a summary of the Institute's annual report *Lönebildningsrapporten* (in Swedish), analysing the economic conditions for wage formation in Sweden.

All of our reports can be downloaded from our website at www.konj.se/english. The forecast reports are available at www.konj.se/swedisheconomy and data can be found at www.konj.se/english/data-sets.

Summary

Employment has increased at a healthy rate over the past decade, and the labour market was close to equilibrium in 2016. Equilibrium unemployment is expected to be largely unchanged at around 7 per cent through to 2030. Estimates of equilibrium unemployment provide useful support for economic policy. Cyclical variations' impact on unemployment, and variations in unemployment over a business cycle may be smaller if wages are flexible. In large parts of the private sector, wages significantly adjust to variations in the regional labour market situation. However, this wage adjustment differs between industries depending on how wages are determined and on the wage structure. Wages in industries where national pay settlements are particularly normative do not seem to be affected by variations in the regional labour market situation. These industries also employ more people who are at high risk of unemployment, leading to greater variations in employment among those with a weak attachment to the labour market. Wage formation is also affected by productivity. An international comparison of productivity at industry level reveals that Sweden is one of the countries with the highest levels of productivity in manufacturing, albeit with variations between its various subsectors. In the NIER's opinion, the Swedish manufacturing industry is competitive.

Wage Formation in Sweden presents the economic background to wage formation in the coming round of collective bargaining. The aim of the report is to assist the social partners and the National Mediation Office with high-quality analysis. The NIER expresses no opinion on how wages and salaries in general should develop.

The last major round of collective bargaining resulted mainly in three-year settlements. As the next round will not begin for a couple of years, this year's report focuses to a greater extent than before on structural challenges in the labour market. The report contains three thematic chapters which use economic theory and empirical data to explore developments in equilibrium unemployment, wage flexibility in the labour market, and productivity. It also includes special analyses looking at developments in employment and competitiveness in industries exposed to international competition, and the prevalence of foreign labour in Sweden.

Equilibrium unemployment up until 2030

The NIER defines equilibrium unemployment as the level of unemployment that would prevail with the economy operating at full capacity (zero output gap) both in Sweden and abroad.

Estimates of equilibrium unemployment can be used to split actual unemployment into a cyclical component and a structural component. Equilibrium unemployment is therefore a key concept when analysing the labour market and formulating economic policy. In practice, the labour market is hardly ever in equilibrium, due to new shocks occurring all the time, and previous shocks fading. Any estimate of equilibrium unemployment is therefore associated with considerable uncertainty.

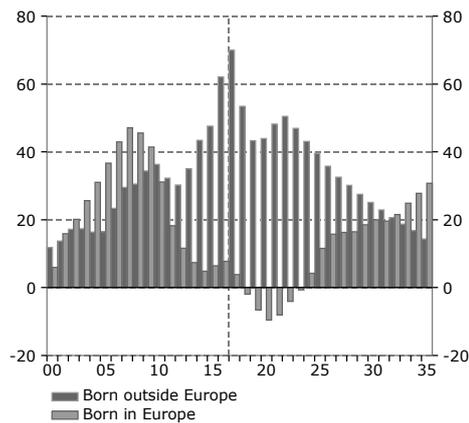
STRUCTURAL FACTORS AFFECT EQUILIBRIUM UNEMPLOYMENT

In the NIER’s opinion, the most important structural factors affecting equilibrium unemployment are the rate of structural change, matching efficiency, demographic developments, economic policy and the conduct of the social partners.

The NIER believes that the labour market was close to equilibrium in 2016.

Diagram 1 Population, age 15–74

Annual percentage change in thousands



Source: Statistics Sweden.

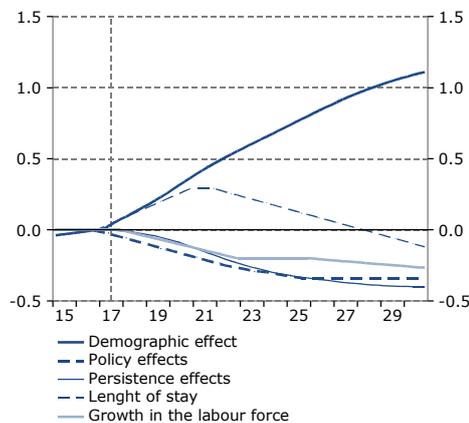
DEMOGRAPHIC DEVELOPMENTS PUSH UP EQUILIBRIUM UNEMPLOYMENT

Demographic developments are the single most important factor for equilibrium unemployment going forward. Growth in the labour force has been strong over the past decade due to a major influx of immigrants born outside of Europe. All else equal, high inflows into the labour force mean higher equilibrium unemployment, because it takes time for the unemployed to find work. From 2018, growth in the labour force is set to slow, which will put something of a damper on equilibrium unemployment. The composition of the labour force is also changing, with a decrease in the native population aged 15-74 and an increase in the share of non-European-born persons in the labour force (see Diagram 1).

On average, unemployment is higher among non-European-born persons, which means that equilibrium unemployment will increase as the share of non-European-born persons rises. This change in the composition of the labour force is the most important reason for the increase in equilibrium unemployment (see demographic effect in Diagram 2). Equilibrium unemployment is also temporarily high as a result of the surge in the number of recent arrivals.

Diagram 2 Effects on equilibrium unemployment

Percentage points, quarterly values



Source: NIER.

DWINDLING EFFECTS FROM THE FINANCIAL CRISIS PUT A DAMPER ON EQUILIBRIUM UNEMPLOYMENT

When people become long-term unemployed, they often lose human capital and reduce their search activity, which reduces their chances of finding work. An economic slump bringing an increase in long-term unemployment will therefore result in a persistent deterioration in matching, which in turn pushes up equilibrium unemployment. The persistence effects from the

financial crisis in 2008 are now set to peter out, putting a damper on equilibrium unemployment. Economic policy initiatives, including active labour market policies, have a gradual impact on equilibrium unemployment for a number of years after they are introduced. This means that previous policies will help reduce future equilibrium unemployment.

All of the above effects on equilibrium unemployment are summarised in Diagram 2. Taken together, they mean that equilibrium unemployment is expected to be largely unchanged at around 7 per cent up until 2030 (see Diagram 3).

SWEDISH WAGE FORMATION INFLUENCED BY OUTSIDE WORLD

Wages are rising slowly considering the high level of resource utilisation in Sweden. There are several possible explanations for this. One may be that the social partners are taking greater responsibility for overall employment and agreeing on lower pay increases aimed at reducing equilibrium unemployment. Such ambitions are not, however, reflected in collectively agreed minimum wages, which are rising at the same rate as before in relation to median wages.

Another possible explanation is the influence of the outside world on Swedish wage formation. The manufacturing industry, which plays a normative role in each round of collective bargaining, is to a great extent exposed to international competition and so heavily influenced by an outside world where resource utilisation is lower than in Sweden. This is contributing to lower pay settlements in Sweden than economic activity would permit. This does not, however, explain the reduction in wage drift over and above the national settlements.

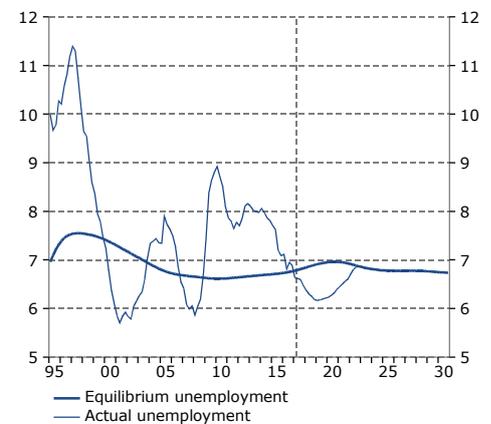
An international trend towards low wage growth in the wake of lower productivity growth and increased global competition are also possible, contributing factors.

Wage flexibility and wage-setting structures

If wages adjust to cyclical variations, there is a reduced risk that periods of weak demand will lead to high unemployment and so lasting negative effects on the labour market. Wage flexibility is also important for bringing about changes in relative wages, hence steering labour towards the industries and professions where there is demand. On the other hand, wage flexibility should not hinder desirable structural change, for example by preventing the closure of persistently unprofitable firms with low productivity. The NIER has analysed how wages in different industries in the private sector reacted to variations in the regional labour market situation in 1999-2013. The degree of local wage formation varies across industries, which means that they have different potential for regional wage adjustment. The analy-

Diagram 3 Unemployment and equilibrium unemployment

Per cent of labour force, seasonally adjusted quarterly values



Sources: Statistics Sweden and NIER.

sis takes account of regional wages being affected by structural and cyclical changes in the composition of the workforce.

The results show that wage-setting structures are important for the degree of wage flexibility. The analysis indicates that wages are not affected by variations in the regional labour market situation in industries where national pay settlements are more normative for actual wages, for example where collectively agreed minimum wages have a major influence over the actual wage distribution, or where set pay scales are common. Not even wages for employees at high risk of unemployment, or new employees who have previously been unemployed or outside the labour force, adjust to the regional labour market situation in these industries. At the same time, employees in these industries are at higher risk of unemployment than those in other parts of the private sector. A lack of wage flexibility is worrying from an economic perspective. If wages do not react to reduced demand, the entire adjustment to the prevailing labour market situation will be through higher unemployment, and this will hit those with a weak attachment to the labour market particularly hard.

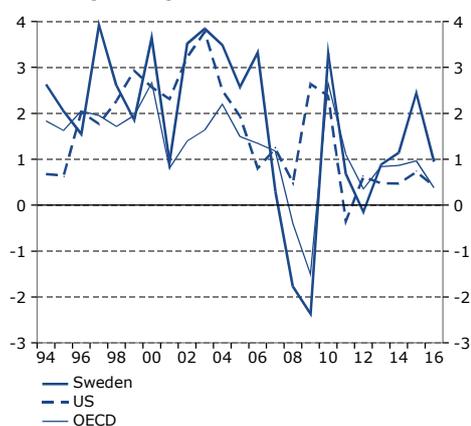
However, industries where national pay settlements are more normative for actual wages, and which therefore have low wage flexibility, only account for a relatively small share of employment in the private sector (around 20 per cent). Once these industries are excluded, the results show that relatively high regional unemployment has a clear moderating effect on regional wage levels. For example, a doubling of unemployment in a county from 4 to 8 per cent will reduce regional wage levels in these industries by 3 per cent in the short term and almost 9 per cent after a few years. Regional wage adjustment in these industries is also greater for employees with a weak attachment to the labour market than for those at low risk of unemployment.

Productivity in Sweden

One key factor for wage formation in the long run is firms' productivity – how much can be produced for a given amount of inputs. Sweden and many other countries have had relatively low productivity growth for more than a decade (see Diagram 4). Productivity growth in the OECD countries has moved similarly to that in Sweden, with an initial sharp decrease around 2007 followed by a surge in 2010 and slow rates of growth since. The pattern does vary between countries and regions, but the overall picture is much the same. The slowdown in productivity we are seeing is thus an international phenomenon, which indicates that there are, at least to some extent, common explanatory factors for the weak growth in productivity.

Diagram 4 Productivity in the whole economy

Percentage change



Note. Refers to productivity per employee for OECD, and per hour for Sweden and the US.

Sources: The Conference Board and Macrobond.

SWEDISH PRODUCTIVITY GROWING SLOWLY

The weak productivity growth that began in Sweden around 2007 was exacerbated by the financial crisis (see Diagram 5). There are several possible explanations for this slow productivity growth. These include lower productivity growth in the information and communication technology industries, falling growth in the most technologically advanced countries, and also a cyclical effect due to the protracted economic slump bringing low investment. In Sweden's case, the weak growth in productivity is probably down to a combination of factors, and these have partly to do with the financial crisis and developments abroad.

ALL KEY EXPLANATORY FACTORS CONTRIBUTING TO LOWER PRODUCTIVITY GROWTH

To assess the possible reasons for the weak productivity growth in Sweden since 2007, we decompose productivity growth in the business sector into three components: capital deepening (the change in the flow of capital services generated by the capital stock per hour worked), labour quality (skills) and total factor productivity (TFP).

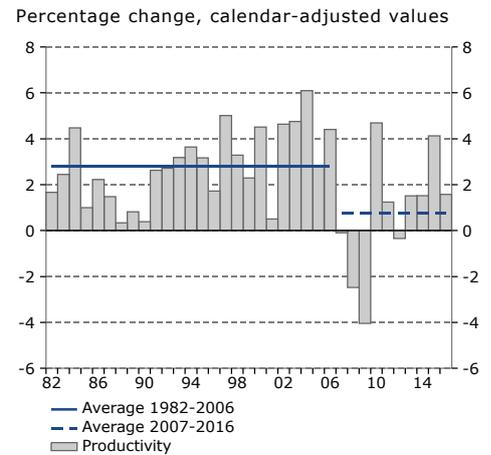
The analysis shows that the slow productivity growth since 2007 is a result of all three components having contributed less to productivity growth than they did in 1994-2006 (see Diagram 6). The most important explanatory factor is the change in the contribution from TFP. This is an international phenomenon: TFP growth has been subdued in many other countries too. At an aggregated level, the ongoing structural change in Sweden, with a shrinking manufacturing industry and growing service sector, is also putting something of a damper on productivity growth.

INTERNATIONAL COMPARISONS OF PRODUCTIVITY AT INDUSTRY LEVEL

At an aggregated level, Sweden boasts a relatively high level of productivity compared to other countries, but not the highest. An international comparison of productivity at industry level shows that Swedish manufacturing is close to the front line in Europe, and Sweden is also near the forefront when it comes to information and communication services. Industry-level comparisons must, however, be interpreted with care, because both the statistics and the composition of each industry vary from country to country. In a more in-depth analysis of manufacturing, we conclude that Sweden has lower productivity levels than many other countries in some subsectors, including electrical equipment and textiles.

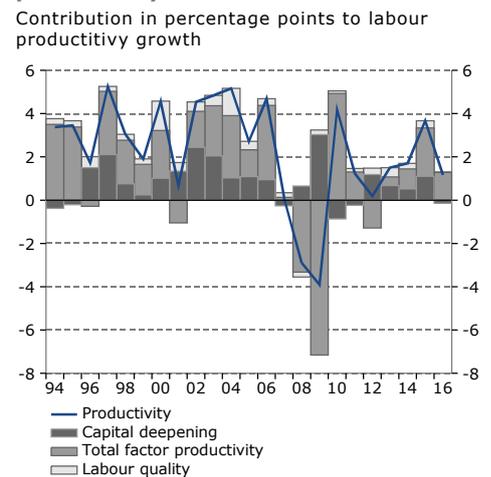
Other industries too are examined. The analysis reveals, for example, that productivity levels in Sweden lag the leading countries in parts of the service sector, including hotels and restaurants, wholesale, health care and parts of the transport sector.

Diagram 5 Productivity in the business sector



Sources: Statistics Sweden and NIER.

Diagram 6 Decomposition of labor productivity in the business sector



Sources: Statistics Sweden and NIER.

Sweden is also some way off the leaders in mining, agriculture and fisheries.